R E P O R T R E S U M E S

ED 003 041 24

SEX DIFFERENCES IN ACHIEVEMENT MOTIVATION.

BY- PIERCE, JAMES V.
CHICAGO UNIV.

REPORT NUMBER CRP-1097 PUB DATE DEC 61
EDRS PRICE MF-$0.18 HC-$3.08 77P.

DESCRIPTORS- ACHIEVEMENT, *MOTIVATION, *PARENT ATTITUDES, MALES, FEMALES, GRADE 12, *SEX DIFFERENCES, *HIGH SCHOOL STUDENTS, *ACADEMIC ACHIEVEMENT, CHICAGO, ILLINOIS, MCCLELLAND NEED ACHIEVEMENT TEST

PROBLEMS RELATED TO SEX DIFFERENCES IN ACHIEVEMENT AMONG ABLE HIGH SCHOOL YOUTH WERE STUDIED--(1) THE LACK OF CORRELATION BETWEEN A MEASURE OF ACHIEVEMENT MOTIVATION AND ACTUAL SCHOOL ACHIEVEMENT AMONG GIRLS, AND (2) THE RELATIVELY DIFFERENT EFFECT OF CERTAIN PARENTAL ATTITUDES ON THE ACHIEVEMENT BEHAVIOR OF BOYS AND GIRLS. THE SUBJECTS USED WERE ABOUT 100 BOYS AND GIRLS IN THE 12TH GRADE (EACH HAD BEEN TESTED ON A NUMBER OF NONINTELLECTUAL VARIABLES 2 YEARS PREVIOUSLY). ALMOST 90 OF THEIR FATHERS WERE ADMINISTERED A PARENTAL ATTITUDES TEST. THE MOTHERS HAD BEEN TESTED PREVIOUSLY DURING A FORMER STUDY USING THE SAME STUDENT SUBJECTS. ALL SUBJECTS WERE ADMINISTERED ACHIEVEMENT AND ATTITUDE TESTS. THE FINDINGS OF THIS STUDY AND THE FORMER STUDY RESULTED IN THE FOLLOWING CONCLUSIONS--(1) ACHIEVEMENT MOTIVATION IN GIRLS IS RELATED TO MOTIVATION TO REACH ADULTHOOD EARLY, RATHER THAN TO MOTIVATION TO ACHIEVE ACADEMICALLY, (2) FOR BOYS, IT IS RELATED TO "COLLEGE GOING" AND ACADEMIC ACHIEVEMENT, AND (3) ACADEMIC ACHIEVEMENT OF BOYS IS AIDED BY HOME SITUATIONS WHICH ARE RELATIVELY DEMOCRATIC, WHEREAS ACADEMIC ACHIEVEMENT OF GIRLS APPEARS TO BE AIDED BY HOMES WHICH ARE MORE STRICT AND DEMANDING. FURTHER RESEARCH WAS RECOMMENDED TO ACHIEVE AN EVEN GREATER UNDERSTANDING IN SUCH AREAS AS ACHIEVEMENT MOTIVATION, VALUES, PARENT ATTITUDES RELATED TO ACHIEVEMENT, AND LEVELS OF ASPIRATIONS IN GIRLS. (AW)

Sex Differences in Achievement Motivation

by

JAMES V. PIERCE

Project No. 1097
Cooperative Research Program
U. S. Office of Education

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education
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SEX DIFFERENCES IN ACHIEVEMENT MOTIVATION OF ABLE HIGH SCHOOL STUDENTS

Cooperative Research Project No. 1097

by

James V. Pierce

University of Chicago
Quincy Youth Development Project
Quincy, Ill.

December 1961

The Research Reported Herein was Performed Pursuant to a Contract with the U. S. Office of Education, Department of Health, Education and Welfare.

ED003041

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ACKNOWLEDGEMENTS

The author wishes to acknowledge the aid of the Quincy Youth Development Project and the C. A. Moorman Foundation with whose support it was created, of the Quincy Public Schools, of the U. S. Office of Education, and of the staff members of the Quincy Project who contributed their various skills and time to the study.

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SEX DIFFERENCE IN ACHIEVEMENT MOTIVATION OF ABLE HIGH SCHOOL STUDENTS

James V. Pierce

CHAPTER I

NATURE AND BACKGROUND OF PROBLEM

A. Importance of Motivation Problem

Educators and guidance personnel, as well as classroom teachers, are convinced that motivation to achieve is an important factor in differentiating between able students who achieve academically and those who do not. Terman, for example, in his study of gifted children observed that ". . . everything considered there is nothing in which the (more successful and less successful) groups present a greater contrast than in drive to achieve and all-round social adjustment." [1] Havighurst, when considering achievement among gifted children, came to the conclusion that motivation to achieve was the most important of the nonintellectual factors related to academic success.[2]

Although it is generally agreed that achievement motivation is an important element in student achievement, the majority of the research that has been done in this area has been limited to boys. When girls have been included in studies, it has usually been under the same theoretical considerations as for boys. The findings for girls

from such studies have been confusing, but their patterns have consistently differed from those of boys. Apparently, achievement motivation operates differently in the two sexes, and there has been no adequate account of the motivational patterns among girls.

B. Related Research on Boys

A number of studies dealing with achievement motivation in intellectually able boys have been completed in recent years. High achieving boys were found by McClelland,[3] Rosen,[4] Strodtbeck,[5] and the writer[6] to score higher on achievement motivation (McClelland's test) than did their low achieving peers. Thus achievement motivation, as measured by the above test, shows consistent results for boys and leads us to believe that the test is a valid measure of achievement related phenomena in boys.

C. Related Research on Girls

Achievement motivation studies dealing with girl subjects are both more rare and much more confusing in that girls behave differently on McClelland's test from boys and are often inconsistent with each other. For example, Stivers found that "non-motivated for college" girls scored higher on achievement motivation than "well-motivated for college" girls. He found the reverse to be true for boys.[7] A related study by the writer found high achieving girls scoring lower on achievement motivation than did equally intelligent, low achieving girls.[6] Thus girls score differently on McClelland's test from boys

and the situation is neatly summed up by Atkinson who said that "perhaps the most persistent unresolved problem in research on n-Achievement concerns the observed sex differences."[8]

D. Prior Research by the Present Investigators

The present investigator and Paul H. Bowman recently completed a study for the U. S. Office of Education entitled "Educational Motivation Patterns of Superior Students Who Do and Do Not Achieve in High School" (Project #208).[6] The population in that study included 120 tenth grade students and 110 twelfth grade students, all of whom were in the upper 30 percent of their respective classes in intellectual ability. Those students doing well in their courses were compared with those doing less well; boys and girls were dealt with separately. The general findings from this study, completed in 1959, were that the high achieving students had significantly higher educational motivations (interview measure), more leadership skills, higher occupational aspirations, better psychological adjustment, more educationally related hobbies, and different family backgrounds.

In addition to differences between high and low achievers, certain sex differences were encountered. When the writer further explored the sex differences in his doctoral dissertation, the sex differences became more obvious.[9] In the first place, the relationship between the test variables and achievement tended to be both closer and more consistent for boys than for girls. For example,

there was a positive relationship between scores on McClelland's test and achievement for boys, but not for girls. Again, girls who got married the first year after high school scored higher on achievement motivation than those girls who attended college. Another example was in the area of mothers' attitudes as assessed by the Parental Attitudes Research Instrument (PARI). Mothers of high achieving boys tended to score low on authoritarian-controlling attitudes while mothers of low achieving boys tended to score high on these attitudes. Not so for mothers of girls. Mothers' authoritarian-controlling attitudes appeared not to adversely affect achievement in their daughters. In fact, the mothers of the high achieving girls scored slightly higher on these attitudes than mothers of low achieving girls.

E. Summary of Problem

Current and recent research on variables related to academic achievement (especially those variables referred to as nonintellectual) indicates that a number of such variables do have a relationship to achievement among intellectually able students. Some puzzling sex differences, however, have been encountered. Sex differences in the areas of achievement motivation and in parent attitudes have shown up most clearly. The present study therefore is aimed primarily toward a better understanding of sex differences in these two areas.

CHAPTER II

OBJECTIVES AND HYPOTHESES

This study proposes to examine two major problems found to be related to sex differences in achievement among able high school youth. The first problem concerns the lack of correlation between a measure of achievement motivation (McClelland's n-Achievement test) and actual school achievement among girls. Second is the relatively different effect of certain parental attitudes (PARI) on the achievement behavior of boys and girls. A third somewhat incidental problem is the examination of two achievement values scales developed by Strodtbeck and deCharms respectively. These scales are studied for two purposes: (1) To examine the sex differences in the test scores, and (2) to study performance on these measures through time, since they were readministered to the same population after a two year interval. These three objectives are discussed in the following paragraphs.

A. Achievement Motivation in Girls

As discussed above (Chapter I, Section C) girls scores on projective tests on achievement motivation do not correlate highly with their actual school achievement; in boys just the reverse is true. In the present study a further examination of achievement fantasy behavior in girls is made by readministering the n-Achievement

test to a group of girls who were in the tenth grade in the original study and are in the twelfth grade in the present study. The scores of these girls retested after a two year interval are analyzed on three bases. First, on the basis of actual academic achievement as used in the original study; second, on the marriage versus career basis as explored in the writers dissertation,[9] and third, on the basis of the amount of education sought beyond high school graduation. Thus, the purpose of this aspect of the study is to gather followup achievement motivation data of girls on whom much data was already available, and to explore the fantasy behavior of these girls in relation to real life variables of high school achievement and post high school careers.

B. Parental Attitudes and Achievement in Children

In the original study parental attitudes were assessed by the Parental Attitudes Research Instrument[10] but it was given only to the mothers of the subjects. It was found that among boys school achievement is positively correlated with democratic attitudes of mothers, whereas among girls school achievement is correlated with more strict, authoritarian, and controlling attitudes in their mothers. The present study seeks further evidence on the relation of parental attitudes to achievement in children through the examination of fathers attitudes toward parent child relationships. A father's form of the PARI has been recently developed by its original authors and is used

for this part of this study. It was administered to the fathers of those boys and girls in the tenth grade of our original study, now in the twelfth grade. Thus, for each child in this group there exists an n-Achievement score, a PARI score for the mother, and a PARI score (father's form) for the father. At the time of this study the father's form has not been validated or equated with the mother's form.

C. Values Instruments

A somewhat more incidental aspect of the present research is that of observing performance through time on two achievement values instruments used in the original study, namely, those developed by Strodtbeck[5] and deCharms.[11] The purpose here is to look for changes in students achievement values through time (from the tenth to the twelfth grade level), and to get a better idea of how these instruments relate to other measures of achievement motivation in boys and girls.

Hypotheses

The following hypotheses will be tested in this study:

1. Bright girls who are relatively low achievers in high school will score somewhat higher in their achievement motivation than their higher achieving peers.

2. Girls who prefer marriage to a career, or who actually marry, will present higher scores on achievement motivation than their career-oriented peers.

3. Girls who discontinue their education after high school will score higher on achievement motivation than their college going peers.

4. Fathers of high achieving boys will exhibit more democratic and less authoritarian attitudes than fathers of low achieving boys.

5. Fathers of high achieving girls will exhibit more authoritarian and less democratic attitudes than fathers of low achieving girls.

6. High achieving boys will score higher on achievement values (Strodtbeck and deCharms scales) than will low achieving boys at the twelfth grade level.

7. High achieving girls will score higher than their low achieving peers on achievement values (deCharms scale only) at the twelfth grade level.

CHAPTER III

SUBJECTS AND PROCEDURE

A. Subjects

In the original study there were 120 above average ability tenth grade students and 110 similar twelfth grade students. The subjects for the present study are the same tenth grade students included in the former study who were still available for testing when they reached the twelfth grade. Of the 120 (54 boys and 66 girls) included in the original study there were 98 (45 boys and 53 girls) available two years later.

The fathers included in this study are spouses of the mothers who were administered the Parental Attitudes Research Instrument two years earlier. There were 40 fathers of boys and 46 fathers of girls who cooperated in the study.

The students are divided into high and low achievers on the "achievement with relation to ability" basis used in the original study. In brief, the formula two times the grade rank (2RG) minus the ability rank (RA) served as the basis for placing the students (boys and girls handled separately) into high and low achievement categories. Those students whose 2RG-RA scores places them above the median for their respective group are referred to as high achievers and those whose 2RG-RA scores place them below the

median are referred to as low achievers. For a further elaboration of the procedure see U. S. Office of Education Project #208, pp. 40-41.[6]

B. Instruments

1. Achievement Motivation

The girls on whom we wished to obtain further achievement motivation data were readministered McClelland's n-Achievement test during May of their twelfth grade (1960).[3] These girls were administered this test for the original study in May of their tenth grade (1958). The same six stimulus pictures were administered in the same manner on each occasion. The students were required to write a four minute story to each stimulus picture. The instructions appear in Appendix I. The protocols were analyzed for achievement thema by Dr. Richard Shekelle, the same person who scored our protocols for the earlier study.[12]

2. Parent Data

The fathers of the students in this study were administered the fathers' form of the Parental Attitudes Research Instrument (PARI-F).[13] This instrument consists of 23 five item scales and is designed to assess parent-child and other family relationships. These data were gathered during November and December following high school graduation of their children (1960) and were administered by mail.

The fathers form of the PARI is a relatively new instrument and at the time of this study it existed only in experimental form; it had not been factored as had the mothers form. In spite of the admitted inadequacies of the instrument it was decided to use the fathers form in the present study in order to get as nearly comparable data as possible on husbands whose wives had been administered the mothers form. By visual inspection the two forms seem to be highly comparable; each has 115 items and 23 scales. Thus these tests cannot be considered alternate forms of the same test but rather must be considered as separate instruments. A comparison of mothers scores and fathers scores can only be meaningful by describing the patterns on each. The complete fathers form, plus the names of each scale and items making up each scale, appears in Appendix II.

An additional effort was made to obtain comparable scores to the original form. As has been mentioned there existed no norms, and no factoring of the fathers form on other populations than our own. The mothers form had been factored by the authors using their accumulated data. This revealed three factors--authoritarian-controlling, democratic, and irritability. It was decided that a rough check score on these same factors could be obtained through the use of a panel of expert judges. A panel of five psychologists, all members of the staff of the Quincy Youth Development Project,

was used. Each was given a copy of the original mothers form of the PARI and was asked to place each scale in one of the following four categories: authoritarian-controlling, democratic, irritability, or neutral or irrelevant. After rating each of twenty-three scales the judge then conferred with the writer and compared his ratings with those determined by the factor analysis. This conference was really a training session to acquaint the judge with the result of the factor analysis in preparation for rating the fathers form. After this conference the judge was given a copy of the fathers form and was instructed to read the items in each scale and place it in one of the same four categories. Those scales on which there was complete agreement among five judges were then combined as a measure of the particular factor. The irritability factor was not used in this study. Differences in the two factors between various groups are used as a rough check of some of the statistical findings. Below are listed the sub scales of each form grouped by factors, the mothers form having been grouped by factor analysis and the fathers by expert judges.

Mothers Form	Fathers Form
Authoritarian-Controlling	
Fostering dependency	Fostering dependency
Excluding outside influence	Excluding outside influence
Breaking the will	Breaking the will
Deification	Deification
Ascendance of mother	Ascendancy of father
Acceleration of development	Forcing independency
Seclusion of the mother	Home as locus of interest
Suppression of aggression	Encouragement of aggression

Inconsiderateness of husband	Possessiveness of wife
Suppression of sex	Suppression of affect
Avoidance of communication	Avoidance of affection
Martyrdom	Harsh punishment
Fear of harming the baby	Complaint of ascendancy of wife
Approval of activity	Deception
Intrusiveness	
Dependency of the mother	

Democratic

Encouraging verbalization	Encouraging verbalization
Equalitarianism	Equalitarianism
Comradeship and sharing	Autonomy of the child

Irritability

Irritability	Irritability
Marital conflict	Marital conflict
Rejection of the home making role	

Neutral

Strictness	Change of orientation
	Dependency on family of orientation
	Acting out sexuality
	Failure to attain parental role

There are nine scales on the mothers and fathers form of the PARI which have identical captions, and whose items are either identical or quite similar. These include scales 1, 2, 4, 7, 10, 11, 12, 14, and 15 (fathers form). For instance on scale 2, "fostering dependency", the item, "a child should be protected from jobs which might be too tiring or hard on him", appears on both forms; three of the five items on this scale are identical. Other items are quite similar on the two scales. On the fathers form appears this item, "a father should do his best to avoid any disappointment for his child", while on the mothers form this statement is made, "children should be kept away from all hard jobs which might be discouraging."

Of the remaining fourteen scales eight are quite similar in name and content such as the following pairs: "Acceleration of development" and "forcing independence", "suppression of aggression" and "encouragement of aggression", etc. Six additional scales are peculiar to each of the forms.

3. Values Tests

In order to learn more about the two achievement values tests developed respectively by Strodtbeck[5] and deCharms[10] and further to examine students' performance on these instruments following a two year interval since the first administration, the boys in this study were administered these two tests at the twelfth grade level. The girls were administered deCharms' test only. In the original plan of the present study, neither of these tests were included for girls, because of the consistent performance by girls on both instruments in the original study. The decision to include one of these tests for the girls was made after the girls graduated from high school; the test then was sent to all those girls who took it during their tenth grade year. Interestingly we were able to obtain an even larger sample of girls in this manner than when we gave the McClelland test while they were still in school. The girl sample size for this test was 57 (31 high achievers and 26 low achievers).

Strodbeck's values test consists of 8 items to which the students are required to agree or disagree. Hence the possible

score range is from 0 to 8. The instrument appears in Appendix III. The deCharms' values scale consists of 9 items and the student is required to indicate degree of agreement or disagreement on a six point scale from +3 for strong agreement to -3 for strong disagreement. This scale is reproduced in Appendix IV.

C. Analysis of Data

1. Girls and Achievement Motivation

The girls in this study are compared in three ways with regard to their achievement motivation scores (performance on McClelland's test). First, high achievers in school work (grades) are compared to low achievers; second, those with an orientation to marriage are compared to those with a career orientation; and third, those who continued their formal education beyond high school graduation are compared to those who discontinued their education.

2. Parent Attitudes

The fathers of the boys and girls in this study are divided into fathers of high achievers and fathers of low achievers, and their PARI scores are compared on the basis of achievement of their children. The parents social status scores were used to further subdivide these groupings for some comparisons. Qualitative comparisons with their spouses scores on the mothers PARI of two years earlier were made.

3. Values Instruments

The scores of the high and low achieving boys in the twelfth grade (1960) were compared with their scores on the same instruments administered in the tenth grade in 1958. The same was true for the girls scores on deCharms values instrument.

CHAPTER IV

FINDINGS AND DISCUSSION

A. Achievement Fantasy in Girls

First the girls in this study were compared on the achievement (high and low) basis, and second on marriage vs. career orientation, with a followup comparison of actual marriage with college attendance. Following these comparisons the girls in this study (1960 high school graduates) were combined with those who graduated in 1958. Using this larger sample, those girls who went to college were compared with those seeking no further education. Both groups of girls had taken the McClelland test during May of their senior year in high school.

1. Achievement Fantasy and Actual Achievement in Girls

It may be recalled from the discussion in Chapter I that in earlier studies "non-motivated for college" girls and low achieving girls have scored slightly higher on achievement motivation than "well-motivated for college" girls and high achieving girls. In Table I, we find that the former tenth grade girls now in the twelfth grade reverse their tenth grade scores. When given the test in the tenth grade the low achieving girls had a mean score of 4.70 to that of their high achieving peers' mean score of 4.18. The present

scores in Table I, below show the high achieving girls scoring higher at the P=0.05 significance level.* The large standard deviations indicate considerable overlap in scores between the two groups. Nonetheless, on the average, behavior of these girls on McClelland's test at the twelfth grade level is inconsistent with their behavior at the tenth grade level, and hypothesis #1 must be rejected.

Table 1

Achievement Motivation Scores of High and Low Achieving Girls on Two Administrations of McClelland's n-Achievement Test

	High Achievers		Low Achievers		P-Value
	Mean	S.D.	Mean	S.D.	
Tenth Grade	4.18	3.35	4.70	4.28	not
N	33		33		siginificant
Twelfth Grade	5.55	5.85	2.96	3.88	0.05
N	29		24		

Whereas high achieving boys and "motivated for college boys" score consistently higher on achievement motivation than low achieving boys and "non-motivated for college" boys, these

*In making statistical comparisons, significance tests of means (2 tail) were used.

findings do not characterize girls. It appears that girls behave inconsistently both with boys and with themselves when achievement motivation is examined on an achievement basis. To date there is no consistent evidence that demonstrates that achievement motivation in girls means the same thing as it does in boys.

2. Marriage vs. Career Orientation and Achievement Motivation

In the writer's dissertation, which was based on the data used in the original U. S. Office of Education Study, girls (1958 graduates) achievement motivation scores were compared on the bases of (1) marriage vs. career orientation, and (2) actual marriage one year after high school vs. actual college attendance one year after high school. The findings were inconclusive, but tended in the direction of the marriage-oriented and the girls actually getting married scoring higher than career-oriented or actual college-going girls. Using this information as a clue, similar comparisons were made with the subjects in the present study.

Looking at girls who chose career over marriage in answering the question, "If you had to choose now (senior year) between a career and marriage, which would you choose?", we find that the girls who chose a career actually scored higher on achievement motivation. (See Table 2) There were 23 girls who chose career as their answer and their average achievement motivation score on McClelland's test was 4.70 (S.D.=4.5). There were ten girls who clearly chose marriage and their average achievement motivation

score was 3.50 (S.D.=4.8). The numbers were small and the overlap in scores between groups was considerable. Those who failed to make a clear choice were not included.

Table 2

Girls Achievement Motivation Scores and Their Career-Marriage Orientation

Groups	N	n-Achievement Scores		P
	53	Average	S.D.	
Career vs. Marriage "Orientation"				
Preferring Career	23	4.70	4.50	N.S.
Preferring Marriage	10	3.50	4.80	
No Clear Choice	20			
Followup 1 year later				
Those in College	32	3.06	3.62	
Those Married	8	7.38	5.86	.02

These girls were followed up one year after graduation and those who actually attended college were compared with those who actually got married. There were 32 out of the 53 subjects who actually attended college and only 8 who actually got married within the year. The average achievement motivation score in the twelfth grade for those attending college was 3.06 (S.D.=3.62) and for the 8 who got married the average score was 7.38 (S.D.=5.86). Thus again, as with the 1958 graduating girls, those who actually got married scored much higher on achievement motivation. These

data are also presented in Table 2. Hypothesis 2 must be rejected at the point of career preferences but accepted concerning actual career choices.

3. Achievement Motivation and Formal Training Beyond High School

Since the two groups of girls (1958 and 1960) were both tested at the twelfth grade level and were drawn from original populations determined to be comparable on a number of variables (intelligence, social status, adjustment, grades, etc.), they were combined for a comparison of achievement motivation and post-high school education.

The top 30 percent of the 1958 and 1960 graduating girls were therefore divided into three groups as follows:

a. Those attending an academic type college.

b. Those enrolled in a short term job preparation program (e.g. beauty academy, business training, etc.)

c. Those seeking no further education beyond high school.

There were 59 girls in the 1958 graduating class and 53 in the 1960 graduating class who had completed McClelland's achievement motivation test, or 112 girls in all who took the test at the twelfth grade level. Fifty-six went to college, 14 took some sort of shorter term job training (e.g., beauty academy, X-Ray technician, business training, and nurses training), and 42 took no formal training beyond high school. The data are presented in Table 3, and the statistical comparison is between means 1 and 3, or the two large groups of girls (those attending college and those seeking no formal educational training beyond high school).

Table 3

Girls Achievement Motivation Scores and
Education Beyond High School

	N	Mean Scores, N-Achievement Test	S.D.	P-Value
1. College	56	3.84	4.25	
2. Short Term Preparation	14	5.50	5.13	(M_1-M_3) 0.01
3. No Post High School	42	6.62	6.07	

As can be seen in Table 3 ($mean_1$-$mean_3$) the girls who pursued no further educational training beyond high school scored significantly higher (P=0.01) than their college going peers, and hypothesis #3 is accepted. Those who took short term job preparation training scored in between the above two groups.

Discussion

The results of studies to date have provided no evidence that high achievement motivation scores are related positively to academic achievement in girls, as has consistently been found to be true for boys. However, in this population there does appear to be an inverse relationship between achievement motivation scores for girls and the amount of formal education sought by them. How is this to be interpreted? Is the McClelland test, which uses

stimulus pictures with male figures only, a valid test of achievement motivation for girls? Or might it be measuring instead the ability to identify with men or find achievement satisfaction through identification with men? Assuming the test to be valid, the indication is that the girls who go directly into the adult world upon graduation are more highly motivated to achieve in their own right than college going girls. This might suggest, further, that achievement motivation in girls attaches itself not to academic performance, as it does in boys, but rather to more immediate adult status goals. This would be a logical assumption in that academic success is much less important to achieving status as a woman than it is for a man. In other words, academic performance may be an inappropriate criterion of achievement among girls.

Only more research can help to answer these questions. The present findings indicate two areas of needed further investigation--a study of the n-Achievement instrument using female figures in the stimulus pictures, and the study of other than academic criteria as measures of actual achievement in girls.

B. Fathers' Attitudes and Achievement

As stated in Chapter I, boys and girls appeared to achieve differentially in relation to mothers' attitudes as assessed by the Parental Attitudes Research Instrument which was administered to some 200 mothers in the original study. In that study it was found that high achieving boys had mothers with democratic attitudes

whereas low achieving boys had mothers who were authoritarian-controlling. High achieving girls, on the other hand, had mothers who were more authoritarian-controlling than were the mothers of low achieving girls.

In the present study 40 fathers of boys and 45 fathers of girls were administered the fathers' form of the Parental Attitudes Research Instrument in order to ascertain if fathers' attitudes were related to achievement in their children in a similar way to those attitudes of their spouses. As discussed in Chapter III in the section on instruments, the scales of the fathers' form were rated by the Quincy Youth Development Project staff members according to those same dimensions which had been factor analysed in the mothers form. Using the high and low achievement categories, the fathers of boys and fathers of girls scores are presented in Tables 4 and 5 respectively. The entire instrument and its scoring categories appear in Appendix II.

As can be observed in Table 4 there were only two scales on which the fathers of high and low achieving boys differed in a very significant way statistically, namely, "autonomy of the child" and "avoidance of affection." On the rest of the scales the differences between these two groups of fathers are not significant statistically. However the means and standard deviations of all scales are given for what value they may be to those interested in the instrument itself.

Table 4

Means, Standard Deviations and P-Values for Fathers of High and Low Achieving Twelfth Grade Boys on the Fathers' Form of the Parental Attitudes Research Instrument

PARI Scale	Scaled Factors	Fathers of High Achieving Boys (N=20)		Fathers of High Achieving Boys (N=20)		P-Value
		Mean	S.D.	Mean	S.D.	
18. Autonomy of the child	dem.	15.20	3.41	18.60	2.98	0.001*
17. Avoidance of affection	auth.	17.15	4.11	19.40	3.61	0.06*
1. Encouraging verbalizations	dem.	18.80	3.85	18.80	4.32	N.S.
2. Fostering dependency	auth.	16.50	4.69	18.00	4.86	N.S.*
3. Home as locus of interest	auth.	16.20	2.89	16.50	4.14	N.S.*
4. Breaking the will	auth.	14.95	3.91	15.70	4.03	N.S.*
5. Harsh punishment	auth.	17.20	4.86	17.30	4.29	N.S.*
6. Forcing independence	auth.	19.65	2.40	20.55	3.78	N.S.*
7. Marital conflict		17.85	3.53	17.95	4.26	N.S.*
8. Failure to attain parental role		16.55	2.37	17.45	3.47	N.S.*
9. Encouragement of aggression	auth.	16.60	2.42	16.20	3.78	N.S.*
10. Deification	auth.	18.85	3.12	17.90	4.56	N.S.
11. Excluding outside influence	auth.	16.30	4.35	15.35	4.71	N.S.
12. Irritability		16.10	3.88	15.80	4.90	N.S.
13. Acting out sexuality		13.55	3.05	13.55	3.07	N.S.
14. Equalitarianism	dem.	15.55	3.43	14.75	3.67	N.S.
15. Ascendancy of father	auth.	17.45	4.55	16.60	4.17	N.S.
16. Possessiveness of wife	auth.	15.55	3.55	16.50	3.61	N.S.*
19. Complaint of ascendancy of the wife	auth.	15.11	3.25	14.95	4.35	N.S.
20. Suppression of affect	auth.	19.65	2.87	20.00	4.22	N.S.*
21. Change of orientation	auth.	16.70	3.76	16.15	4.72	N.S.
22. Dependency on family of orientation		14.55	4.11	15.65	3.28	N.S.*
23. Deception	auth.	13.00	3.11	13.65	3.41	N.S.*

*Fathers of low achieving boys scored higher on these scores.

Table 5

Means, Standard Deviations and P-Values for Fathers of High and Low Achieving Twelfth Grade Girls on the Fathers' Form of the Parental Attitudes Research Instrument

PARI Scale	Scaled Factors	Fathers of High Achieving Girls (N=24)		Fathers of High Achieving Girls (N=21)		P-Value
		Mean	S.D.	Mean	S.D.	
20. Suppression of affect	auth.	21.17	4.18	18.52	2.52	0.01
1. Encouraging verbalization	dem.	16.83	4.68	18.29	3.70	N.S.*
2. Fostering dependency	auth.	17.92	5.45	16.14	3.22	N.S.
3. Home as Locus of interest	auth.	16.00	4.99	15.81	3.76	N.S.
4. Breaking the will	auth.	14.88	4.36	15.43	3.46	N.S.*
5. Harsh punishment	auth.	19.21	4.67	17.05	5.16	N.S.
6. Forcing independence	auth.	21.21	4.72	20.24	4.14	N.S.
7. Marital conflict		19.13	4.41	17.90	5.16	N.S.
8. Failure to attain parental role		16.54	3.75	17.43	3.71	N.S.*
9. Encouragement of aggression	auth.	15.75	4.65	14.24	4.37	N.S.
10. Deification	auth.	16.79	5.96	17.76	4.27	N.S.*
11. Excluding outside influence	auth.	14.88	4.63	16.10	3.42	N.S.*
12. Irritability		15.12	4.93	14.57	3.87	N.S.
13. Acting out sexuality		12.42	3.46	12.14	2.73	N.S.
14. Equalitarianism	dem.	14.88	3.90	15.52	4.15	N.S.*
15. Ascendancy of father	auth.	16.50	5.67	14.62	5.14	N.S.
16. Possessiveness of wife	auth.	15.92	5.17	16.90	4.77	N.S.*
17. Avoidance of affection	auth.	17.00	5.51	16.00	5.11	N.S.
18. Autonomy of child	dem.	16.88	4.03	17.67	3.65	N.S.*
19. Complaint of ascendancy of wife	auth.	14.21	5.17	15.43	4.60	N.S.*
21. Change of orientation		15.33	4.65	15.19	5.20	N.S.
22. Dependency on family of orientation		14.25	3.38	13.95	3.84	N.S.
23. Deception	auth.	14.00	4.91	13.33	3.56	N.S.

*Fathers of low achievers scored higher on these scales.

This would seem to indicate that fathers of boys do not share the same attitude toward them as their spouses. The former study found that mothers of low achieving boys were more authoritarian-controlling in their attitudes and it was postulated that this might have interfered with the achievement of the boys. However the fathers in these same families of low achieving boys have attitudes of more autonomy for the child. These findings indicate contradictory attitudes in mothers and fathers of boys. When the first two scales are considered together, those of "autonomy of child" and "avoidance of affection", then it might be interpreted that autonomy without affectional support might be regarded more realistically as neglect. At best the evidence is quite weak, however, and not sufficient to support hypothesis # 4.

It was judged that the nature of the data do not warrant more complex statistical analysis, but this does not prevent some speculative inspection of the rest of the table. In trying to determine what attitudes are characteristic of fathers of high achieving boys we must conclude from the first two items that they are more demanding and strict (low on autonomy), but that this controlling attitude is mixed with more affection (low on avoidance of affection). Even though the differences in the rest of the table are statistically not significant it is interesting to note those scales on which the high achieving boys' fathers made a higher average score--such as deification, equalitarianism, ascendancy of father, encouragement of aggression, encouraging verbalization, irritability, acting

out sexuality, etc. This seems to give what might be called a strong masculine picture, but also a picture that has in it a place for a relationship with a child (equalitarianism, encouragement of aggression and verbalization).

In Table 5 the PARI scores of fathers of girls are presented. Of the twenty-three scales there is only one scale where the differences are significant at a level of .01 or greater, namely, "Suppression of affect". Again many fewer differences between fathers are showing up on this instrument than occurred with mothers on the original PARI form.

In the original study it was found that mothers of high achieving girls scored higher on the authoritarian-controlling attitudes scales. The evidence here is very meager but tends in the same general direction. Fathers of high achieving girls scored significantly higher on suppression of affect as a parental attitude. In the rest of the table it was also found that they were higher, though not significantly, in the following scales--harsh punishment, fostering dependency, ascendancy of father, avoidance of affection, forcing independence, encouragement of aggression, irritability, etc. On the other hand, fathers of low achieving girls were higher on all three of the democratic scales. This pattern is in a general way similar to the mothers of high achieving girls. It is also rather similar to the fathers of high

achieving boys, with the exception that there seems to be more evidence of positive affection between the father and his high achieving boy than between the father and his high achieving girl. Thus, the data are favorable to hypothesis # 5, but not at a statistically significant level.

Thus the data on the fathers form of the PARI seem to show very few differences between fathers of children who are achieving and those who are not achieving in high school. The evidence at best is weak but it seems to suggest that high achievement in girls is associated with more strict authoritarian controlling attitudes in both their fathers and mothers. High achievement in boys seems to be associated with a rather strict but warm attitude on the part of the father and democratic attitudes on the part of the mother.

C. Fathers Attitudes and Social Status

Social status appears to be operative in the PARI test. That is, higher status fathers, as was true of higher status mothers in the original study, tend to score lower on authoritarian scales than do low status fathers. Moreover, social status appears to affect the scores of mothers and fathers of girls to a greater degree than mothers and fathers of boys.

The Index of Status Characteristics (ISC)[13] rating on each student was used to divide the students into high and low status

groups. The natural breaking point near the middle of the distribution of the students in the entire class was used as the dividing point for high and low status. The fathers of the students then carried the same status rating.

Using the above method for status grouping, there were 21 fathers of boys in the high status category and 19 in the low status category. The differences between scale means on this comparison of high status and low status fathers were even smaller than comparisons on the achievement basis. However, fathers with high status scored higher on the democratic scale Encouraging Verbalization, P=0.13. The low status fathers scored higher on two scales, namely, Harsh Punishment, (an authoritarian scale) and Marital Conflict (a neutrally rated scale). The P-values were 0.28 and 0.16 respectively. These differences were too small to be statistically significant.

A comparison was also made using high status fathers only, but subdivided by the high achievement and low achievement scores of their sons. The group sizes were quite small, but the scales on which the groups differed are presented in Table 6. In this table we observe the high status fathers of low achieving boys scoring higher on authoritarian scales with very few exceptions, but they are also higher on two of the three democratic scales.

Table 6

PARI Scale Scores of High Status Fathers
of High and Low Achieving Boys

	Scaled Factors	Fathers of High Achievers Average PARI Score (N=10)	Fathers of Low Achievers Average PARI Score (N=11)
1. Encouraging verbalization	dem.	18.80	20.54*
2. Fostering dependency	auth.	16.00	17.18*
4. Breaking the will	auth.	13.80	16.45*
5. Harsh punishment	auth.	15.70	17.28*
8. Failure to attain parental role		16.50	17.64*
9. Encouragement of aggression	auth.	15.90	17.55*
10. Deification	auth.	17.90	19.18*
11. Excluding outside influence	auth.	16.00	15.73
14. Equalitarianism	dem.	16.00	15.00
16. Possessiveness of the wife	auth.	16.80	17.18*
17. Avoidance of affection	auth.	17.30	19.73*
18. Autonomy of the child	dem.	15.40	18.09*
19. Complaint of ascendancy of wife	auth.	15.10	14.36
20. Suppression of affect	auth.	19.70	21.00*
22. Dependency on family of orientation		13.90	15.45*
23. Deception	auth.	13.00	13.91

*Fathers of low achievers higher on these scales, but no differences in the table were statistically significant.

With the low status fathers the picture is even less clear. The low status fathers of high achieving boys scored higher on five authoritarian scales and two democratic scales, whereas the low status fathers of low achieving boys scored higher on seven authoritarian scales and one democratic scale.

The PARI scale differences between high status and low status fathers of girls were larger and more numerous than was true for fathers of boys. The high status fathers more often scored lower on the authoritarian rated scales. These differences, being larger and more numerous are presented in Table 7. The scales where the differences were significant and an additional three scales which approached significance are presented.

Table 7

High Status and Low Status Fathers' of Girls Scores on 7 PARI Scales

Scale No. and Name	Scaled Factors	High Status Fathers (N=24) Mean	S.D.	Low Status Fathers (N=22) Mean	S.D.	P-Value
2. Fostering dependence	auth.	15.83	4.51	18.64	4.32	0.03
7. Marital conflict		17.08	4.20	19.91	5.01	0.04
8. Failure to attain parental role		15.88	2.40	18.05	4.50	0.04
10. Deification	auth.	15.88	5.38	18.81	6.05	0.08
11. Excluding outside influence	auth.	14.38	4.45	16.67	4.85	0.10
17. Avoidance of affection	auth.	17.36	5.43	15.57	6.54	0.31*
22. Dependence on family of orientation		12.92	3.53	15.48	4.51	0.03

*The high status fathers scored somewhat higher on this scale.

When fathers of girls are grouped by both status and achievement of their daughters and their scores on the PARI observed, we again find a pattern which differs from that of fathers of boys. Here we observe the high status fathers of high achieving

girls scoring higher on more authoritarian scales than the high status fathers of low achieving girls. The means and scale ratings are presented in Table 8.

Table 8

PARI Scale Scores of High Status Fathers of High and Low Achieving Girls

Scale No. and Name	Scaled Factors	Fathers of High Achievers PARI Scores (N=14)	Fathers of Low Achievers PARI Scores (N=10)
		Mean	Mean
1. Encouraging verbalization	dem.	15.50	19.60*
3. Home as locus of interest	auth.	15.07	16.10*
4. Breaking the will	auth.	15.14	14.30
5. Harsh punishment	auth.	19.07	16.70
10. Deification	auth.	14.43	17.90*
11. Excluding outside influence	auth.	13.71	15.30*
14. Equalitarianism	dem.	13.00	17.70*
15. Ascendancy of father	auth.	16.93	15.20
16. Possessiveness of the wife	auth.	18.64	15.90
17. Avoidance of affection	auth.	18.21	16.70
18. Autonomy of child	dem.	15.14	18.40*
20. Suppression of affect	auth.	20.00	18.00
21. Change of orientation		14.29	15.60
23. Deception	auth.	14.43	12.70

*Fathers of low achievers higher on these scales, but no differences in the table were statistically significant.

In the above table we observe the high status fathers of high achieving girls scoring higher on 7 authoritarian scales and no democratic scales compared with the high status fathers of low achievers scoring higher on 3 democratic scales and 3 authoritarian scales. This trend is opposed to the trend for fathers of boys.

With the low status fathers the situation is somewhat less revealing. The low status fathers of high achieving girls scored higher on 8 authoritarian scales and 3 democratic scales whereas the low status fathers of low achievers scored higher on 5 authoritarian scales.

SUMMARY

The evidence from the fathers' form of the PARI is somewhat less clear than that from the mothers' form. There are fewer significant differences between fathers on the fathers' form than was found true for mothers. This would seem to suggest that fathers are more similar to each other than mothers, or perhaps that they are less involved in the academic achievement and social status of the children than the mothers. At least there are relatively few differences here upon which additional theory can be built.

In brief it appears from these data that similar attitudes in both mothers and fathers are related to academic achievement in girls, namely, that more authoritarian and strict attitudes toward child rearing practices are characteristic of parents of high

achieving girls. For boys the picture is different with fathers and mothers. Mothers of high achieving boys are characterized by more democratic attitudes, while fathers of high achieving boys seem to be more strict but affectionate.

The PARI data in this study confirm in a tentative way the other findings with regard to sex differences; that is, the achievement motive operates differently in girls than in boys. The data are not convincingly impressive. Further research in these areas and with different variables is needed if we are to understand (1) the cultural sex role impact and (2) the implementation of more favorable achievement conditions for both boys and girls.

D. Achievement Values and Achievement

The boys in this study were administered both Strodtbeck's (8-item) and deCharms' (9-item) values instruments in their tenth grade (1958) as part of the earlier study. Now at the twelfth grade level, two years later, they were re-administered these same tests. The high achievers scored higher on each instrument in the earlier study, but the difference failed to be significant at the 5 percent level on deCharms' test. Nevertheless, the data looked promising and the instruments appeared to have value in discriminating on an achievement basis for boys.

The boys in the present study (tested at the twelfth grade level) performed consistently with their behavior at the tenth grade

level. The scores from the earlier study are included in Table 9 with the scores from the present twelfth grade administration. As can be seen in the table, the difference between high and low achieving boys is smaller on Strodtbeck's measure at the twelfth grade administration of the tests. However, when those five items which differentiated best in Strodtbeck's test were used as the basis of comparison, the difference reached the 0.09 level of significance. This entry appears in the last row of Table 9.

Table 9

High and Low Achieving Boys' Scores on deCharms' Values Scale and Strodtbeck's Values Scale Administered at the Tenth and Twelfth Grade Levels

deCharms' V-Scale	High Achieving Boys		Low Achieving Boys		P-Value
	Mean	S.D.	Mean	S.D.	
10th Grade Scores (N's=27)	44.00	9.36	41.59	7.93	0.30
12th Grade Scores (N's=24 and 21 respectively)	50.00	7.93	45.29	7.72	0.04
Strodtbeck's V-Scale					
10th Grade Scores (N's=27)	6.67	1.15	6.11	1.97	0.02
12th Grade Scores (N's=24 and 21 respectively)	7.10	1.02	6.86	1.02	0.43
12th Grade (Items 4, 5, 6, 7, & 8 only)	4.38	0.78	3.95	0.92	0.09

Thus, although the data are not convincingly strong, the fact that the same high achieving boys scored consistently higher than their low achieving peers at both the tenth and twelfth grade level suggests that there is a relationship between values as measured by these two tests and academic achievement for boys.

E. Values and Achievement in Girls

The girls were administered deCharms' Values instrument only at the twelfth grade level. The decision to administer this test was reached after their graduation from high school and was therefore administered by mail. Thirty-one high achieving girls and 26 low achieving girls completed the instrument. The N here is slightly higher than for the McClelland test; the reason for the increase is that two girls who had gone to college early and two who had married and moved away cooperated by mail, but were not present for administration of the n-Achievement test.

Interestingly the girls, unlike the boys, failed to behave consistently at the two age levels. Both the tenth and twelfth grade scores of these girls are presented in Table 10 below.

We find the girls (at the twelfth grade level) behaving inconsistently with their performance at the tenth grade level on both McClelland's achievement motivation test and deCharms' valuing achievement test. Hence, these two tests which appear to tell us something about achievement behavior in boys, tell us little about girls. Or, to be more precise, they tell us confusing things about girls.

Table 10

High and Low Achieving Girls' Scores on deCharms' Values Scale Administrations at Both the Tenth and Twelfth Grade Levels

deCharms' V-Scale	High Achieving Girls		Low Achieving Girls		P-Value
	$Mean_1$	S.D.	$Mean_2$	S.D.	
10th Grade Scores (N's=33)	44.21	7.12	39.82	9.69	0.04
12th Grade Scores (N's=31 and 26 respectively)	43.87	6.43	43.96	5.30	no difference

CHAPTER V

IMPLICATIONS

This chapter is concerned with speculation about the developmental course of achievement motivation in boys and girls. It is inserted here to give opportunity for expression of some of the thinking that has been developed during this study, and possibly to point some directions for future research.

The findings of this and the original study are rather confusing, not only because of the paucity of significant differences obtained, but because of the nature of the different instruments and groupings. Thus, an attempt is made here to build a construct of how achievement motivation develops in the life span of boys and girls, making it fit the little that is known but also speculating beyond the data when necessary.

The Development of Achievement Motivation

Beginning in the early grades our culture seems to preach school achievement to children. It is a common thing for teachers and parents to hold before children the value of good grades in school. There are undoubtedly social class variations in this pattern--the upper class family may demand A's of their children

while in some lower class families they may insist only on passing the grade--and there are undoubtedly variations within class due to the different family values about education. Nevertheless, with some exceptions, the dominant theme is to make school achievement a "good" for children. During the early grades this cultural message is quite clear to both boys and girls without too many contradictions, except for certain families who remain negatively oriented to education.

During the upper elementary grades boys begin to get a second message from their culture somewhat in conflict with the earlier one or at least taking precedence over it, namely, to be a man a boy must prove himself in physical activities. This message seems to come mostly from the adult males in his world--fathers, father's friends, male teachers and coaches, Scout leaders, and Little League leaders. The message is strongly reinforced by peers who are engaging in sports and outdoor activities. During these years interest in and motivation for academic pursuits are secondary at best.

With girls during these same upper elementary years there is no major modification of motivations for school achievement. Both mothers, fathers, and teachers still want the girls to do well in school. This is the main way for girls at this age to achieve adult approval and social recognition, and the research evidence shows that they are usually better students than boys at this stage. This situation continues until about the sophomore or junior year of high school.

At this point, in about the tenth or eleventh grade, most boys "wake up"; they begin to realize that success in the adult world requires better school achievement. They begin to shift motivation from their avocational interests in sports, etc., to preparation for a career. This usually means choice of a vocation, more studying and better grades, or alooking for a job. For many boys this shift does not take place until they actually get into college or on a job; for some, particularly athletes, it may not happen until the last years of college.

This "normal course" of the development of achievement motivation in boys is apparently encouraged and supported by a home situation in which mothers demonstrate democratic non-controlling attitudes toward their boys and in which fathers are affectionate but more strict in their demands of their sons. Where the reverse is true (authoritarian-controlling mothers and emotionally cold but lenient fathers) the achievement motivation and actual school achievement of boys is apparently hindered.

These same boys who are progressing normally in the direction of career motivation are at the same time consciously aware of the future and of the goals they might want to achieve, and are actually working toward some goal however poorly defined. This is observable at the late high school or college level, as seen in the Strodtbeck and deCharms' instruments.

The story is quite different for girls. After the tenth or eleventh grade, at the same time that boys are shifting toward a career orientation, girls are shifting away from it. Girls begin to see at this time that to achieve in life as adult females they need to achieve in non-academic ways, that is, attaining the social graces, achieving beauty in person and dress, finding a desirable social status, marrying the right man. This is the successful adult woman. Consequently, girls in late high school put less energy into academic achievement and more into social and extra curricular achievement. Their achievement motivations are now directed toward realizing personal goals through their relationship with men. They start learning and practicing those behaviors which they think are appropriate to the role of adult, married women. This results in poorer school performance either through active avoidance of competition with boys or through concentration of interests and efforts elsewhere. These girls who are following the normal course of development for successful adult status as women are very likely to leave school at high school graduation or after a year or two in college. They are most likely to seek adult status through marriage within a year after their high school graduation or to seek jobs in the business world where their association with men can lead in this direction.

This so called "normal course" of development for girls seems to be associated with a home situation in which mothers and fathers have democratic non-controlling attitudes toward their daughters. The opposite home situation, that of a controlling mother and father seems to be more associated with that group of girls who stay in the academic tradition, achieve well in the last years of high school, and go to college. This group is not as strongly motivated for achievement and may be taking a road of least resistance or of following the wishes of controlling parents. These academically oriented girls show more conscious awareness of future goals at the tenth grade level but by the twelfth grade level are more in conflict about their role and future.

When the predominant parental attitudes of the parents of the boys who are following their normal course toward careers is compared with the attitudes of parents of girls who are following their normal course toward homemakers are compared, it is evident that they are very similar. This would seem to mean that in our culture we have rather specific adult goals for each sex, careers for boys and marriage for girls, that a home situation of a democratic mother and a strict father is most frequently associated with the successful achievement of these goals, and that in the process of growing up both boys and girls experience at least one major role conflict--boys in sports versus preparation for a career

in which preparation for a career wins, and girls in academic achievement versus marriage in which marriage wins.

The atypical course of development seems to be more often related to harsh, authoritarian-controlling types of attitudes on the part of mothers and fathers. With boys this seems to more often result in dropping out of the formal educational program either at high school or college levels and in low motivation for achievement; apparently when boys are frustrated by too much control, they rebel, leave school, and live for the present. With girls the authoritarian control of parents seems more often to be successful in that their daughters stay in school, have higher motivation for academic achievement, and actually achieve better in school.

When the findings of these two studies are brought together they give general support to the above speculation. In Figure 1 they are represented schematically. The scales of the PARI significant at the .05 level or higher are placed in capital letters. It is clear that the parents of the normally developing boys and girls have fewer outstanding findings, but most of them tend in the democratic direction. With the atypical pattern there are more clearly differentiated scales and they are predominantly on the authoritarian side.

NORMAL PATTERN OF DEVELOPMENT

	Fathers	Mothers	Fathers	Mothers
Parent Attitudes	Ascendancy Deification Excluding outside influence Deception Equalitarianism	DEMOCRATIC Encourage verbalisation Seclusion of mother Dependency of mother Irritability	Encourage verbalisation Autonomy of child Exclude outside influence Possessiveness of wife Complaint of wife ascendancy Failure to attain parent role	DEMOCRATIC
Child Characteristics	BOYS - High Achieving - High N-Achievement scores - More go to college		GIRLS - Low Achieving - High N-Achievement scores - Most marry after high school	

ATYPICAL PATTERN OF DEVELOPMENT

	Fathers	Mothers	Fathers	Mothers
Parent Attitudes	AUTONOMY OF CHILD AVOID AFFECTION Foster dependency Dependency Failure to attain parent role Breaking the will Possessiveness of wife	STRICTNESS FOSTER DEPENDENCY DEIFICATION ASCENDANT MOTHER AVOID COMMUNICATION SUPPRESS SEX INTRUSIVENESS ACCELERATE DEVELOPMENT	SUPPRESS AFFECT Harsh punishment Foster dependency Ascendancy of father Avoid affection	STRICTNESS AUTHORITARIANISM Equalitarianism
Child Characteristics	BOYS - Low Achieving - Low N-Achievement scores - Fewer go to college		GIRLS - High Achieving - Low N-Achievement scores - More go to college	

Figure 1. Patterns of parent attitudes and their relation to achievement patterns in their children.

CHAPTER VI

SUMMARY

Thus, 45 above average ability boys and 53 above average ability girls who were tested during their tenth grade school year on a number of non-intellectual variables thought to be related to achievement were re-tested on selected variables at the twelfth grade level. The boys, as well as the girls, were divided into high and low achievers on the basis of "achievement with relation to ability" for comparison purposes. The boys were re-tested on two achievement values tests, deCharms' test and Strodtbeck's test. The girls were re-tested on achievement motivation (McClelland's test) and on achievement values (deCharms' test). In addition, the fathers' form of the Parental Attitudes Research Instrument (PARI) was administered to the fathers of the boys and girls in this study.

The study had three major aspects: (1) to learn more about the operation and meaning of achievement fantasy in girls; (2) to study the relationship of fathers' attitudes to achievement in their children; and (3) to further study two values instruments used in the U. S. Office of Education Study #208 which was completed in 1959.

Findings

High achieving girls, who scored lower than their low achieving peers on achievement motivation at the tenth grade level, scored higher than their low achieving peers when re-tested at the twelfth grade level. However, when girls were compared on achievement motivation according to whether or not they pursued further education beyond high school, a significant difference was found between college goers and those who pursued no further training. Those going to college scored significantly lower on this measure. On deCharms' valuing achievement test, the high achieving girls scored significantly higher than their low achieving peers (P=0.04 level) at the tenth grade level, but when re-tested at the twelfth grade level they scored slightly lower than their low achieving peers on this test. Boys, on the other hand, performed consistently at each testing (tenth and twelfth grade level) on the two achievement values tests, namely, those of deCharms' and Strodtbeck. In each instance, the high achieving boys scored higher than their low achieving peers.

The fathers of high achieving boys tended to be less authoritarian in attitudes than fathers of low achieving boys as measured by the PARI test. Fathers of high achieving girls, on the other hand, tended to be somewhat more authoritarian in attitudes than fathers of low achieving girls. The fathers'

behavior in these instances was consistent with that of their spouses who were tested two years earlier on the mothers' form of the PARI, in all areas but one.

Conclusions

Achievement fantasy as measured by McClelland's test appears to be unrelated to academic achievement in girls. When girls are divided on the basis of college goers vs. those who seek no further education, those who seek no further education score significantly higher. This leads the writer to believe that achievement motivation in girls is related to motivation to reach adulthood early, rather than to motivation to achieve academically. For boys it is related to college going and academic achievement. Thus, in this area we find a sex difference operating which has not been taken into account by educators and as yet not fully understood. Our society expects different behaviors from girls from what it does from boys and our educational program does little to accomodate for these differences.

Although the data are weak, both the findings from this study and from the U. S. Office of Education Study completed in 1959 suggest that academic achievement in boys is aided by home situations which are relatively democratic, whereas academic achievement of girls appears to be aided by homes which are more strict and demanding. If this be true, then

further account of this phenomenon should be taken into account in the education of our children both in the home and in the school.

Finally, a number of non-intellectual variables have been found to differentiate consistently between able high and low achieving boys. For girls, the findings have often been inconsistent with those for boys and often with each other. Further research is greatly needed if we are to understand sex differences in such areas as achievement motivation, values, parent attitudes related to achievement, and levels of aspirations in girls. This study represents a step in that direction.

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APPENDIX I

INSTRUCTIONS FOR McCLELLAND'S n-ACHIEVEMENT TEST

N-A Test of Imagination

This is a test of imagination.

We are going to show you a series of pictures and ask you to tell a story that is suggested to you by each picture. The pictures will be projected on the screen one at a time. You will have twenty seconds to look at the picture and then four minutes to make up and write a story about it. On the top of each page in your test booklet is a picture number. You are to use one page for each picture. Also on the top of each page are written the following questions which will guide your thinking and enable you to cover all the elements of a story in the time allowed:

1. What is happening? Who are the persons?
2. What has led up to this situation? That is, what has happened in the past?
3. What is being thought? What is wanted? By whom?
4. What will happen? What will be done?

Start your writing just below these questions and if the space is not enough to finish your story, use the back of the page.

Use your imagination and thinking as quickly as possible and write as complete a story as you can. There are no right or wrong answers or stories. Feel free to write whatever kind of story

is suggested to you when you look at the picture. Do not worry about spelling, grammar, or punctuation; they are not important. The only important thing is the story you will tell. Do not merely describe the picture you see. Tell a story about it; an interesting and vivid story.

Be sure to read and keep in mind the four questions which appear at the top of each page while writing your story.

The examiner will keep time and tell you when it is time to finish your story and get ready for the next picture.

Father's Form of the Parental Attitudes Research Instrument

Read each of the statements below and then give your reaction to them as follows:

A	A	a	d	D	D
strongly agree	agree	mildly agree	mildly disagree	disagree	strongly disagree

Indicate your opinion by drawing a circle around the "A" if you strongly agree, around the "A" if you agree, around the "a" if you mildly agree, around the "d" if you mildly disagree, around the "D" if you disagree, or around the "D" if you strongly disagree.

There are no right or wrong answers, so answer according to your opinion. It is very important to the study that all questions be answered. Many of the statements will seem alike but all are necessary to show slight differences of opinion.

	Agree			Disagree		
1. Children should feel absolutely free to gripe about rules which their parents make.	A	A	a	d	D	D
2. A father should do his best to avoid any disappointment for his child.	A	A	a	d	D	D
3. The home is the only thing that matters to a good father.	A	A	a	d	D	D
4. Children need some of the natural meanness taken out of them.	A	A	a	d	D	D
5. If small children refuse to obey, parents should whip them for it.	A	A	a	d	D	D
6. Parents who allow their children to grow up with the idea that other people will always help them just encourage them to become failures.	A	A	a	d	D	D

7. Sometimes it's necessary for a husband to tell off his wife in order to get his rights.	A	A	a	d	D	D
8. Few young men realize how much of a burden the responsibility of a family can be.	A	A	a	d	D	D
9. It's a father's job to see to it a boy has the courage to fight.	A	A	a	d	D	D
10. More parents should teach their children to have unquestioning loyalty to them.	A	A	a	d	D	D
11. There is no excusing someone who upsets the confidence a child has in his parents' way of doing things.	A	A	a	d	D	D
12. The things wives and children ask of a man after a hard day's work are enough to make anyone lose his temper at times.	A	A	a	d	D	D
13. It isn't going to hurt children to see each other or their parents undressed.	A	A	a	d	D	D
14. A parent should always treat a child as an equal because the child is helpless.	A	A	a	d	D	D
15. A father's duty is to see to it that the whole family does what he knows is best.	A	A	a	d	D	D
16. Few wives realize that husbands are part of the family too and need some looking after.	A	A	a	d	D	D
17. Kissing and tender treatment of children should be kept within limits if children are to develop properly.	A	A	a	d	D	D
18. Parents should keep out of children's activities as much as possible so that children can learn to do things on their own.	A	A	a	d	D	D
19. The main thing wrong with today's homes is the wife tries too much to run everything.	A	A	a	d	D	D

20. A child who can keep calm on the surface no matter what happens, will do well in life. A A a d D D

21. The best attitude for a child to learn is to take things as they are. A A a d D D

22. A man should be careful that his marriage doesn't result in his losing interest and close contact with his own mother and father. A A a d D D

23. It's best to trick a child into doing something he doesn't want to do instead of having to argue with him. A A a d D D

24. Parents should ask for and take into account the opinions of children on all questions of how the family should be run. A A a d D D

25. A child should be protected from jobs which might be too tiring or hard on him. A A a d D D

26. Too many men forget that a father's place is with his family when he is not working. A A a d D D

27. Many children, like horses, must be broken in order to be trained. A A a d D D

28. Spanking a child immediately when he is cross and nagging is better than letting him get into the habit of acting like that. A A a d D D

29. The child who grows up with the idea he will have to do almost everything for himself gets much further in life. A A a d D D

30. It's natural to have quarrels when two people who both have minds of their own get married. A A a d D D

31. Most young fathers are bothered more by the feeling of being tied to the home than by anything else. A A a d D D

32. A boy has to be taught to use his fists when someone else is asking for it.	A	A	a	d	D	D
33. A child soon learns that there is no greater wisdom than that of his parents.	A	A	a	d	D	D
34. It's best for the child if he never gets started wondering whether his father's views are right.	A	A	a	d	D	D
35. There are times when any husband or father gets to the point where he feels he can't stand his marriage or family a moment longer.	A	A	a	d	D	D
36. You have to give children sexual freedom or they will not develo properly.	A	A	a	d	D	D
37. In a well-run home children should have things their own way as often as the parents do.	A	A	a	d	D	D
38. There always has to be a boss, in the family, that person should be the father.	A	A	a	d	D	D
39. Spending a lot of time with her parent's family is a good way for a wife to lose out with her husband.	A	A	a	d	D	D
40. It's quite possible for a parent to overdo love and affection for children.	A	A	a	d	D	D
41. If children plan their own work and do it without the direction of parents they are more willing to help and they do more.	A	A	a	d	D	D
42. The trouble with wives nowadays is they don't have any respect for a man's right to have his say so.	A	A	a	d	D	D
43. Parents who teach their children to think at least twice before expressing how they feel help them to get along better in life.	A	A	a	d	D	D

44. One important thing for a child to learn is that about all you can expect to do is make the best of what you have.	A	A	a	d	D	D
45. The responsibilities of taking care of his wife and children should not keep a husband from spending plenty of time with his own parents.	A	A	a	d	D	D
46. Often you have to fool children to get them to do what they should without a big fuss.	A	A	a	d	D	D
47. A child has a right to his own point of view and should never be kept from expressing it.	A	A	a	d	D	D
48. Parents should know better than to allow their children to be exposed to difficult situations.	A	A	a	d	D	D
49. A man can't do a father's job and have an active social life too.	A	A	a	d	D	D
50. A child is better off if he has a healthy fear of adults.	A	A	a	d	D	D
51. The wise parent will not hesitate to whip a child to teach him to change his ways.	A	A	a	d	D	D
52. A child should be taught never to depend on others for anything he can do for himself.	A	A	a	d	D	D
53. Even in marriage a person must fight for his rights at times.	A	A	a	d	D	D
54. Men don't have any idea when they get married about the obligations and problems they are taking on.	A	A	a	d	D	D
55. A father should never tolerate his son's running away from a fight.	A	A	a	d	D	D
56. Loyalty to parents comes before anything else.	A	A	a	d	D	D
57. A child should not question the thinking of his parents.	A	A	a	d	D	D

58. A man may need to "blow his top" once in a while around the home just to clear the air a bit.	A	A	a	d	D	D
59. A child who isn't curious about sex is the one you should worry about.	A	A	a	d	D	D
60. Grown-ups should treat their children the same way they treat other grown-ups.	A	A	a	d	D	D
61. The old fashioned family in which the father is in charge is best for everyone.	A	A	a	d	D	D
62. Wives too often use the children as an excuse for ignoring the father.	A	A	a	d	D	D
63. Giving children love and affection can be carried too far just like anything else.	A	A	a	d	D	D
64. Managing their own affairs without interference develops responsible children.	A	A	d	d	D	D
65. Most wives would do better if they would quit trying to act smarter than their husbands.	A	A	a	d	D	D
66. A parent can be very helpful to a child by teaching him how to keep from showing it when he is "boiling" inside.	A	A	a	d	D	D
67. Children should know that happiness is a result of being satisfied with life as it is and not in always trying to change it.	A	A	a	d	D	D
68. There is no excusing a wife who tries to come between a man and his parents.	A	A	a	d	D	D
69. You have to fool children into doing many things because they wouldn't understand anyway.	A	A	a	d	D	D

70. A family is at its best when the children say what they think about things no matter what the subject is. A A a d D D

71. A child is most lovable when he is small and helpless. A A a d D D

72. Most fathers shouldn't have much time left for anything else by the time they take care of their jobs and their families. A A a d D D

73. A stubborn child has to have some punishment or he may not learn anything. A A a d D D

74. Children who are always breaking their parents' rules will remember them after a good whipping. A A a d D D

75. A child will take care of himself much better later on if he never gets started in the first place expecting help from others. A A a d D D

76. A woman will just take advantage of a man if he doesn't let her know very firmly what he will and will not stand for around the house. A A a d D D

77. A father has enough to do just supporting a family without being held to blame for every thing his children might do. A A a d D D

78. If a child doesn't learn to strike back good and hard when hit he will end up being the one the others pick on. A A a d D D

79. A child should always love his parents above everyone else. A A a d D D

80. A child's trust in his parents should be safeguarded better by not having so many people around with different ideas. A A a d D D

81. Raising children is a nerve-wracking job.	A	A	a	d	D	D
82. There is no need for a parent to spend a lot of time explaining sex to children except to tell them what kinds of sex play are prohibited.	A	A	a	d	D	D
83. When a parent asks a child to do something the child should always be told why.	A	A	a	d	D	D
84. The ideal home is one in which it is clear to all that the father is head of the household.	A	A	a	d	D	D
85. Too many wives are so busy with friends, relatives or the children that they forget all about the man they married.	A	A	a	d	D	D
86. A proper child does not like a lot of kissing and hugging.	A	A	a	d	D	D
87. Most of the time when parents try to supervise what children are doing they just keep the children from developing independence.	A	A	a	d	D	D
88. Women too often get the idea from books and magazines that they don't have to respect what their husbands say.	A	A	a	d	D	D
89. A child who always looks calm and cool no matter how upset he feels inside gets along best.	A	A	a	d	D	D
90. The main thing in growing up is to learn there isn't too much you can do except take things as they are.	A	A	a	d	D	D
91. A man must consider his own parents' views just as much as those of his wife when making family plans.	A	A	a	d	D	D
92. There's no excuse wasting a lot of time explaining when you can get kids doing what you want by being a little clever.	A	A	a	d	D	D

93. If a child has been trained properly he will speak right up and disagree with his parents when he feels they are wrong on some matter. **A** A a d D **D**

94. Parents should try to prevent all difficulties which might make a child unhappy. **A** A a d D **D**

95. A man should get his happiness out of his wife and children and not out of stag parties and vacation trips with other men. **A** A a d D **D**

96. If you are soft-hearted with children they will just find out they can push you around. **A** A a d D **D**

97. A child deserves to be slapped when he talks back to his parents. **A** A a d D **D**

98. Sooner or later a child must learn if he doesn't look out for himself no one else will. **A** A a d D **D**

99. A marriage in which there are no arguments is usually one which is pretty dull. **A** A a d D **D**

100. A man should not get married until he really knows what it means to take care of a family and is ready for it. **A** A a d D **D**

101. If you teach a child to always be friendly he won't be able to handle himself when there is a quarrel on the playground. **A** A a d D **D**

102. A child should grow up convinced his parents always know what is the right thing to do. **A** A a d D **D**

103. Children should never learn things outside the home which make them doubt their parents' ideas. **A** A a d D **D**

104. It's natural for a father to "blow his top" when the wife or children are selfish and demanding. A A a d D D

105. Children are going to find out any way so you might just as well tell them what grown-up sex life is like. A A a d D D

106. Parents have to respect the wishes of children even more than the child respects their wishes. A A a d D D

107. The happiest homes are those in which the father has the final word on all important decisions. A A a d D D

108. The biggest trouble with most wives is they forget they belong to their husband and not to their parents or other people. A A a d D D

109. A parent has to learn to keep his affection for his children under control or he sets a bad example for the children. A A a d D D

110. A child can only become self-confident if allowed to do things his own way. A A a d D D

111. Modern education has taught many women to think they are not only equal to men but even brighter and more capable. A A a d D D

112. Parents should teach a child to control his feelings as soon as he can understand. A A a d D D

113. Children should be taught to be content with just what they happen to have and not expect to get much more. A A a d D D

114. No matter what his wife may think a man has to see to it that his own mother's requests and wishes are carried out as much as is possible.	A	A	a	d	D	D
115. When a child is doing something he shouldn't, one of the best ways of handling it is just to get him interested in something else.	A	A	a	d	D	D

PARI SCORE SHEET

NAME:_____ DATE_____ NUMBER_____

	Scale Total
1. Encouraging Verbalizations	
2. Fostering Dependency	
3. Home as Locus of Interest	
4. Breaking the Will	
5. Harsh Punishment	
6. Forcing Independence	
7. Marital Conflict	
8. Failure to Attain Parental Role	
9. Encouragement of Aggression	
10. Deification	
11. Excluding Outside Influence	
12. Irritability	
13. Acting out Sexuality	
14. Equalitarianism	
15. Ascendancy of Father	
16. Possessiveness of the Wife	
17. Avoidance of Affection	
18. Autonomy of the Child	
19. Complaint of Ascendancy of the wife	
20. Suppression of Affect	
21. Change of Orientation	
22. Dependency on Family of Orientation	
23. Deception	

Scoring Instructions: Enter the number 6, 5, 4, 3, 2, or 1 in each square according to whether the response was strong agreement (6) to strong

APPENDIX III

CONSCIOUS VALUES PLACED ON ACHIEVEMENT

STRODTBECK'S V-SCALE

What Are Your Attitudes about These Things ?

Here are some statements with which some people agree and some people disagree. Would you please give your opinions about these statements. Put a check mark after the word "Disagree," if you, in general, disagree with the statement. Put a check mark after the word "Agree," if you, in general, agree with the statement. Do not leave any statements unmarked if at all possible. There is a space below each item for you to make any comments or additions that you like. Do not bother to spend very long thinking about these statements. Give your first judgement.

Agree___ Disagree___ Planning only makes a person unhappy, since your plans hardly ever work out anyhow.

Agree___ Disagree___ When a person is born, the success he or she is going to have is already in the cards, so that he or she might as well accept it and not fight against it.

Agree___ Disagree___ Even when teenagers get married, their main loyalty still belongs to their mother and father.

Agree___ Disagree___ The best kind of job to have is one where you are part of an organization all working together even if you don't get individual credit.

Agree___ Disagree___ When the time comes for a person to take a job, he or she should stay near his or her parents, even if it means giving up a good job opportunity.

Agree___ Disagree___ It's silly for a teenager to put money into a car when the money could be used to get started in business or for an education.

Agree___ Disagree___ Nothing in life is worth the sacrifice of moving away from your parents.

Agree___ Disagree___ Nowadays, with world conditions the way they are, the wise person lives for today, and lets tomorrow take care of itself.

The above scoring represents the correct marking for a top score of 8. Each item counts 1.

APPENDIX IV

STUDENT OPINION QUESTIONNAIRE

deCharm's Valuing Achievement Scale

Here are some statements that people have different opinions about. There are no right or wrong answers. Just mark each one in the blanks at the left, according to the amount of your agreement or disagreement, by using the following scale.

+1 Slight agreement	-1 Slight disagreement
+2 Moderate agreement	-2 Moderate disagreement
+3 Strong agreement	-3 Strong disagreement

Read each item and decide quickly how you feel about it; then fill in the number corresponding to the extent of your agreement or disagreement. Put down your first impressions.

1. ___ I enjoy work as much as play.

2. ___ I nearly always strive hard for personal achievement.

3. ___ I feel that my future peace and self-respect depend upon my accomplishing some notable piece of work.

4. ___ I set difficult goals for myself which I attempt to reach.

5. ___ I enjoy relaxation wholeheartedly only when it follows the successful completion of a substantial piece of work.

6. ___ I work like a slave at everything I undertake until I am satisfied with the results.

7. ___ When a man is no longer anxious to do better than well, he is done for.

8. ___ I feel that nothing else which life can offer is a substitute for great achievement.

9. ___ Only ambition will bring a man's mind into full activity.

Scoring: +3 gets a 7, +2 gets 6, +1 gets 5, omitted a 4, -1 a 3, -2 gets 2, and -3 gets 1.

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